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# Capital Needs for Education in the United States

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EACH of the writers invited to contribute to the Academy's volume on Thrift has probably found the difficulties of his task multiplied by the fact that money values, in which we must perforce define our conceptions of expenditures, savings and capital, are themselves now in process of extraordinary flux. This difficulty is especially evident in discussing investments in education where capital needs are increasing almost proportionately with commodity and wage prices while the growth of assessment values, on the basis of which these needs must largely be met, has decidedly lagged. The writer of this paper will therefore ask that his readers always interpret his statements on the assumption that money values as of June 30, 1914, have remained stable. When we shall have gotten over the confusion produced by the war and the darkening of counsels engendered by those bent on exploiting their particular theories of safety and progress we shall doubtless find ourselves able to make increases in teachers' salaries, in valuation of property for assessment, and the like, in such a way as to distinguish intelligently between those adjustments which must be made because of depreciation in nominal money values and those that should represent permanent changes in terms of real values.

The raising of revenues for public purposes has always taxed the ingenuity of governing authorities. The tornadoes of revolution have more often been generated under the atmospheric pressure of excessive or unwise

taxation than from any other cause. When it is recalled that from one-third to three-fifths of all revenues raised by state and local taxation in America goes to the support of public education the problems of taxation and of wise expenditure confronted by our governing authorities on behalf of public schools are evidently far from simple. The conduct of the schools of the people now constitutes by far our largest public enterprise. It is obviously an enterprise in which, unlike roads, or fire protection, or even policing, returns must be taken considerably on faith. Public schools cannot be made self-supporting as can the post-office and water supply systems. Only strong faith in the permanent values of education can sustain a people in taxing itself, and especially its richest and most powerful members, heavily and persistently for the support of schools which are constantly growing more costly.

In estimating the capital needs of education during the next few years several factors require separate consideration: (a) What will be probable increases along lines of educational effort—salaries of teachers, buildings, equipment, longer school year, smaller classes, etc., in elementary and secondary schools and in state colleges and other than special schools—already securely established and progressively developed during the last fifty years? (b) What will be probable expenditures for new types of public education—vocational, physical, continuation—now apparently developing? (c)

What demands for experimental forms of education may be expected? (d) What changes may be expected in the abilities of the states (or the nation participating) to support public education? (e) In what respects are there now preventable wastes in education, or in what respect can we, without increased expenditures, materially improve the ultimate effectiveness of our school offerings?

#### ANTICIPATIONS SUMMARIZED

We can imagine Uncle Sam as a thrifty *pater-familias* making his decennial budget. "What should the nation plan to spend on its public schools?" His advisers submit observations and recommendations which are first summarized, and then elaborated, as follows:

1. During the last half century the cost of public education has increased faster than either population or taxable valuation, due largely to lengthening of school year, general establishment of free high schools, extending age of required attendance, increasing teachers' salaries, especially in cities, and provision of more expensive supervision.

2. All present tendencies point to the necessity of continued growth in rate of expenditure at least equal to that of recent decades in order to reach adequate minimum standards of effective schooling. This means more particularly: A school year of at least 160 to 180 days in rural districts; a minimum age of compulsory full-time school attendance to the fourteenth birthday: provision of facilities for all persons seeking high school education; more expert supervision; and salary increases sufficient to attract and hold properly qualified teachers.

3. All present tendencies point to the acceptance in the near future by the public of the following as necessary expansions of public education: provision of some facilities for vocational education for all; compulsory continuation school attendance at least to 16 and probably to 18; provision of some form of health supervision for all schools; and provision for some special education of adult immigrants.

4. Certain extensions or modifications of public education are now much discussed, but their probable realization, or, if realized, their probable addition to the cost of education, are still very problematical. The involved problems are indicated by these questions: Is it likely that kindergarten education will be extended? Will junior high school education be considerably more expensive than the grade education it replaces? Will reorganized liberal secondary education prove much more expensive than present high school education? Will the public demand a much longer school year for schools of general education? Must the schools retain a substantial proportion of men teachers? Must the schools seek more expensive service from modern language teachers? Must physical training be provided in cities? Can vocational education be made, in part, self-supporting?

5. Certain redistributions of the burdens of supporting public education may well be expected in the light of present tendencies: (a) Heretofore the major part of the cost of schools has fallen in the primary instance as a tax on property; the present tendency is towards utilization of less direct sources. (b)

The larger political unit, the town rather than the district, the county rather than the town, the state rather than the county, and as a beginning, the nation rather than the state, tends to become the supporting area for a portion of the cost of education; and the contributions of the larger area are so exacted and distributed as to tend to equalize the burden of school support on the one hand and its resulting advantages on the other.

6. Education is still far from being efficient. In many respects its aims are poorly defined, and of course here methods may well be ineffective to the zero point. Even where aims are fairly concrete and demonstrably valid, methods are often bad. Sound principles of public policy clearly point to the desirability of providing at public expense for a substantial amount of research into aims, methods and administration of education as a means of reducing waste and increasing the value of the returns from present and future investments in education.

#### EXPENDITURES FOR PUBLIC EDUCATION

During the last half century growth of expenditures for public education has been considerably more rapid than growth in population. The statistics of the United States Bureau of Education are confessedly neither complete nor exact as regards the two or three decades following 1870; nevertheless they are sufficiently reliable for purposes of general comparison.

In 1870 there was expended for all public school purposes \$1.64 per capita of population; in 1915 the amount was about \$6.03. In 1870 the amount spent per pupil in average attendance

was \$15.55; in 1915, it was \$40.43.

During this half century the ratio of children of school age (5 to 17 years inclusive) has fallen from 31 per cent to 26 per cent of the total population, due in part to diminishing birth-rate and in part to greater longevity of an increasingly healthy people. This decrease in a sense tends to lessen the burden of supporting schools; but this is far more than offset by the lengthening of the school year, the operation of compulsory attendance laws, and the desire of constantly increasing numbers to seek upper grade and high school education. In 1870 57 per cent of persons 5 to 17 years of age were enrolled in public schools; in 1915 nearly 75 per cent. In 1870 the average length of the school term was 132 days and the average number of days attendance made by each enrolled pupil was 78; in 1915 these figures were 159 and 121 respectively.

Some other figures are worthy of attention as showing progress of schools and school expenditure. In 1870, 38 per cent of all teachers were men; in 1915 men constituted less than 20 per cent in spite of the growth of high schools. In 1870 the average monthly salaries of all teachers was just under \$29; in 1915 it was slightly over \$68. Since 1870 the value of all school property has increased more than ten fold—from \$130,000,000 to \$1,567,000,000.

None of these figures can be considered exact, owing to the necessarily imperfect methods of reporting used by the states; nevertheless they are sufficiently accurate to present a fair exhibit of the evolution of the measurable aspects of public education during the last half century. Faults of interpretation are, of course, easily possible. Perhaps the best single measure of

educational expenditures is suggested by the fact that whereas in 1870 the amounts expended per day for each pupil enrolled are computed at 7 and 12 cents respectively for salaries and for all expenses; in 1915 these amounts were 14 and 25 cents.

Viewed in the aggregate, expenditures for public education seem large. But when set in comparison with other less useful forms of expenditure they seem far from striking. The American people now spend upon each of two items—tobacco, and display advertising—sums considerably in excess of all outlays for public education. In years just passed they spent on alcoholic beverages at least twice and, were proper methods of computation employed, probably three times what was spent for education from the kindergarten through the university.

#### ACHIEVEMENTS IN PUBLIC EDUCATION

Space is not here available for an enumeration of our achievements to date in public education. Considered from the standpoint of the ideals of those zealous for the progress of education these achievements are disappointing enough; but viewed historically and comparatively they justify sincere admiration. Free elementary schools are now practically available to all the people; and as respects free and accessible high school education, America surpasses all other countries. State universities, agricultural colleges and higher technical schools are widely available and generously supported. Nearly all states have free schools, often including free boarding accommodations, for the deaf, blind, and semi-delinquent. The length of school year has reached a satisfactory optimum in most cities. The teaching force of the United States is

composed usually of persons of good native abilities and social endowments. Except in rural districts, school building has made great advances in the last three decades. Most of the states now provide text books and other working facilities to pupils. Compulsory school attendance laws are nearly universal and the minimum age at which cessation of education is permitted steadily rises towards fourteen in all states, while in some that goal has been passed.

It has already been noted that the cost of public education has been increasing faster than population and taxable valuation during the last fifty years. There can be no doubt that such rate of increase in terms of real values will continue for many years to come unless the nation should be overtaken by economic catastrophe. All indications are that the people will create the demands. The number of days of school session will be increased in rural schools; the proportion of teachers with professional training will be steadily greater; teachers of inferior personal qualities or training will less frequently be employed; salaries (always speaking in terms of real values) will be raised somewhat, as a means of attracting teachers of superior native fitness and equipment; buildings and teaching facilities will be somewhat better; and in some city schools, at any rate, size of classes will be perceptibly diminished.

Many campaigns are now under way looking to increasing salaries. Most of these have been undertaken, primarily, of course, to aid teachers in keeping their nominal salaries somewhat correlated with rising prices. But in a degree these campaigns represent something more fundamental. In educationally progressive communities, school boards, executives, and ex-

perienced teachers, as well as no inconsiderable part of the public, realize that if the general level of teaching is to be raised, better compensation must be offered as a means of attracting and retaining the kinds of service capable of giving improved service.

In many particulars, standards of public education are yet far below what will be demanded when public opinion becomes better informed. Our rural schools in general now assure literacy, but not enough beyond. Curricula of high schools and upper grades are still without valid objectives. Classes in city schools are often excessively large. Nowhere is there adequate provision for experimental work looking to the scientific improvement of aims, methods, and administration of education.

In terms of money values of 1914 it is safe to predict that expenditures on public education will so rise during the next decade that by 1930 we shall be spending \$10 annually per capita of population on the kinds of schooling already generally established, and excluding possible developments into new fields hereafter to be considered.

#### PROBABLE EXPANSIONS OF PUBLIC EDUCATION

1. *Vocational Education*.—The most absorbing and significant movement in educational thought and practice during the last decade has centered in vocational education. There exists a rapidly growing conviction that facilities for vocational education ought to be available for all; but beyond this, public opinion has not yet gone. Educators themselves are by no means agreed as to what constitutes effective vocational education. But the best informed students are probably agreed on the following conclusions:

a. All adults during all historic times have followed vocations. Since instincts and childish imitation give only meagre preparation towards meeting the requirements of all but a few primitive forms of production, it follows that all adults have at some time and place been *trained, developed* or *educated* (in the broadest sense of the term) for the exercise of one or more vocations. But such vocational education may be the direct and systematized training of a vocational school, or the systematized by-education of organized apprenticeship, or the “pick-up” education of actual participation in first, simple and then more complex phases of the work itself. Now the essence of the “current” movement for the development of vocational schools reflects in reality a social conviction that systematized and effective vocational training should be substituted for the unsystematic and wasteful vocational education which has been the best available for about 90 per cent of all workers.

b. Apprenticeship vocational education is now available for only a small per cent—probably less than 8—of all workers; and its inherent characteristics are such that it may be expected in the future, as it has for many years in the past, to decline in effectiveness.

c. For the large majority of vocations as now developed and specialized, vocational education cannot all be given in some pre-working stage, as is now largely the case with professional education; nor can it consist chiefly, or even largely, of more or less abstract studies of the technical phases of such vocations; nor need it necessarily require extended time at any one stage.

It is difficult, therefore, as yet to estimate the probable cost of an adequate system of vocational education. Between the ages of 15 and 25 we can assume that there are in the United States 2,000,000 persons in each year group, all of whom at some time, or at different times, should be given opportunity for vocational education. Good vocational training for reasons that need not be detailed here is more expensive per pupil per hour than other forms, ranging from 50 cents per student-hour for medicine and engineering to 20 cents per student-hour for the trades, and reaching as low as 10 cents in certain commercial and industrial vocations. Some forms of vocational education can be made partially self-supporting. Nursing education is that now. The best forms of secondary agricultural education can meet one half their total cost. Upgrading industrial education rapidly approximates a condition of self-support as respects all but instruction and overhead charges.

For the next ten years, taking the American people as a whole, it is certain that the investment of \$50 on each of the 2,000,000 persons referred to above, somewhere, or at different intervals, between the ages of 15 and 25, or a total annual expenditure of \$100,000,000, would give splendid returns in the increased economic productiveness, as well as the incidental good citizenship, of the entire people.

2. *Compulsory Continuation Schools.*—The war has given a great impetus to the enactment of legislation providing for compulsory continuation schools. For a number of years before 1914 American educators had been convinced that one of the most successful features of German education was its continuation schools; and a few pro-

gressive states had begun experimental work in their establishments. Present indications are that all states not primarily agricultural will require continuation school attendance to 16 or 18 within a very few years. It is safe to predict that such attendance will affect at least 1,000,000 children of each year age group, or a total of from 2,000,000 to 4,000,000. Adequate schooling for these on the basis of a minimum attendance of four hours per week can hardly be expected to cost less than \$8 annually or a total of from \$20,000,000 to \$30,000,000.

3. *Physical Education.*—It is now generally agreed by all students of education that a school of any type offers an excellent center for health oversight of a public nature. Already it is generally required that instruction in hygiene and sanitation shall form a part of the offerings of all public schools. It is believed by many experts that, given needed facilities and instructors, important results could be accomplished in physical training in most types of schools. Much experimental work in the general field of physical education is now under way, and in spite of the vagueness of many of the objectives proposed, it seems very probable that within ten years all progressive states in the Union will be expending from two to five dollars annually, in addition to present outlays, on the medical inspection and physical education of each child in the public school—or in round numbers if all the states were equally progressive, \$100,000,000.

4. *Education for Adult Immigrants.*—For many years prior to the war America freely received and even welcomed millions of immigrants from Europe and elsewhere. Recently these have come chiefly from countries very

different from our own in language, customs, and political traditions. The test of a national crisis showed that some of these had become well-disposed and useful Americans while others had not. Public opinion is now such that if extensive immigration hereafter takes place, an extensive program of special education for the more mature immigrants must be provided. There is now before Congress a measure providing for a nationally supervised and aided program of special education for illiterate and imperfectly educated adult aliens now here. This bill is based on the assumption that a comprehensive program of such education would now cost the nation and the states together approximately \$25,000,000 per year. The future costs of work of this character will obviously depend upon the extent to which immigration is permitted. If work of a thorough-going quality is to be undertaken it is a fair guess that at least \$100, distributed over several years, would be required properly to "Americanize" each person over 14 years of age coming to the United States from a non-English speaking region.

#### UNSETTLED PROBLEMS

These are a number of unsettled problems in American education, the solutions of which will probably materially affect educational expenditures during the next twenty years, but the actual results of which can only be guessed at as yet.

1. *Kindergartens*.—The actual functions performed or capable of being performed by the kindergarten for children normally circumstanced is yet very uncertain. Children from poor home and street environments clearly derive much gain even from a meagre 600 hours of schooling per year out

of their more than 4,000 waking and playing hours. But there are nearly 6,000,000 children in the United States between 4 and 6 years of age. To provide kindergarten education for all these will cost at least \$200,000,000 per year. Of these 6,000,000, two-thirds, certainly, are being reared in normal environments, judged by reasonable historic standards. Is the kindergarten urgently needed for them? An influential body of fine sentiment today answers, yes! But it is certain that much study must yet be given to the possible functions and actual achievements of the kindergarten in contributing to real educational values before educational authorities can reach dependable decisions.

2. *Administration of Secondary Schools*.—There is rapidly taking place a readjustment of the administrative organization of schools for children from 12 to 14 or 15 years of age. This is primarily a movement to render education for these ages more efficient. Whether the reorganized schools will cost a great deal more than the present upper grade and first year high school work is difficult to guess. Certainly it will not cost less.

3. *Reorganization of High School Courses*.—Far reaching attempts are also being made to so reorganize high school courses and methods that the resulting education shall be more genuinely "functional" as liberal education. Neither of these movements specially contemplates reduction in size of classes or increases in salaries of teachers. The junior high school will manifestly require equipment more expensive than that now provided for the upper grades. Probably in all cases some increase in expenditure will be necessary to realize the objectives desired.



4. *To what extent will men teachers be required in the schools of the future?*—Not only in America but elsewhere men have been steadily disappearing from elementary schools, and the proportion of men teachers in secondary education is diminishing wherever co-education prevails and professional standards are rising. The fundamental cause for this of course is that men and women cannot compete on equal economic terms in teaching or in any other calling. The “modal” groups of men teachers consist normally of those who, in the expectation of society, are supporting, or are preparing to support, families. These constitute the “dominant” economic demand for compensation which if it is not met in teaching, will be sought elsewhere. But the modal group of women teachers consist of celibates who only occasionally have responsibilities for the support of others than themselves. Their dominant economic demands are, therefore, much less than those of men. These conditions develop, of course, in largest measure among teachers over twenty-five years of age. Under twenty-five the relative demands of men and women are not so dissimilar. This situation is, of course, complicated by some special conditions. Where men teachers past the usual age of marriage work side by side on equal terms with women, the men are apt to be of inferior ability and personality to the women, for the reason that teaching ranks for man as a twentieth or thirtieth in the order of best vocations, whereas for women it is often, apart from marriage, the first, or, even in large cities, the second or third best. Now if women teachers of given native abilities, training and maturity can do certain kinds of teaching apparently as well as men, school authorities must

employ them since their services can be procured at much lower cost.

A similar problem appears in the case of young versus elderly women teachers. A very large proportion—always over 60, and often 80 per cent—of all women who enter teaching remain only from two to five years, after which they marry. Hence in rural areas often 80 per cent of all teachers are in effect girls giving service only during their pre-marriage years; while in cities at least half are frequently of that class. But these young women teachers make only low economic demands—in this respect being little different from young farmers, clerks and even engineers and lawyers. They are anxious for experience; they are little concerned with saving for the future; they are inexperienced in bargaining; and often they live at home all, or part, of the year. But women over thirty who expect to remain permanently as teachers must save for sickness or old age. They cannot usually live at home. They are, therefore, at a perpetual disadvantage in competing with the “dominant” mass of young teachers. Their compensation under the operation of the law of supply and demand tends to be kept down to that of the beginners—that is, unless it is evident that they can render a kind of service that these younger persons cannot offer.

Now we possess no satisfactory knowledge as yet of the places and conditions which require the more expensive of men as against women, or of mature, as against young, women. Women teachers are entirely right in demanding “equal pay for equal work.” School authorities are entirely right in procuring service from those who, *in the long run*, will give it for least compensation. On the other

hand, if in a given position a man of equal native and acquired powers to a woman, can, by virtue of his "masculinity," render a grade or kind of valuable service which she cannot, then of course school authorities must have his services even if he holds out for a salary that will enable him to support two adults and three children. It is almost useless to discuss these vexed questions without particularizing. Always assuming equal native powers, training, and maturity, can a man do better or worse work than a woman in teaching a kindergarten? In directing high school athletics? In teaching high school girls singing? In teaching woodwork to boys of fifteen? In teaching all subjects to fourth grade children? In teaching citizenship to boys of sixteen? In teaching the carpenter's trade to boys of seventeen?

Similar problems appear in connection with mature and young women teachers. Assuming equal native abilities and initial professional training, how much superior as a teacher for a third grade of forty pupils in a suburban community is a woman of forty over a woman of twenty-two? In general do young women of twenty to twenty-five succeed well as teachers of seventh grade and eighth grades as now organized? Are young women just out of college acceptable teachers of high school subjects? Do we find special types of simple work for the younger teachers?

Now it ought to be obvious that if, for particular types of schools or courses of instruction men teachers, the mature as well as the immature, are essential, that these will have to be paid substantially larger salaries than celibate women of the same age, general ability and professional preparation. Otherwise these men will seek

employment in fields which will permit them to rear their families appropriate to the ideals and standards of a people not committed to the practice of "race suicide."

5. *Cost of Physical Education.*—Reference has already been made to current discussion of the need and feasibility of physical training as a distinct phase of physical education. If it should prove expedient to embark upon expensive schemes of physical training, the largest expenditures will doubtless first be required for city children. The probable cost of such work is still wholly problematical.

6. *Financing Vocational Education.*—There are those who believe that good vocational education can be made partly self-supporting. Properly organized and conducted vocational schools can undoubtedly turn out a large amount of productive and even marketable work. But it is the present writer's conviction that it will prove much more in accordance with sound public policy to apply the net returns obtained for such product to a payment of a partial wage for the learners than towards the support of their schools. The psychological and social reasons for such action in terms of creation of incentives promoting right standards of workmanship and the like can readily be understood.

#### THE SUPPORT OF PUBLIC EDUCATION

The economic production and accumulation of wealth from which must be taken by taxation the means of supporting public education have been increasing considerably more rapidly than population during the last half century. In spite of the absorption of free lands we have no reason to infer that the same proportion of increase

will not take place during the next few decades, even taking account of the destruction of wealth occasioned by the war. Demands for good education and abilities to support it easily, probably increase at faster ratios than per capita incomes or accumulations subject to taxations, notwithstanding the competition of spending for more visible and immediate gratifications. But the effect of changes in the distribution of either larger incomes or accumulations—towards concentration in a few hands or distribution among many—on the ease with which public revenues can be increased seems yet a very obscure subject in the literature of taxation.

Two tendencies towards equalizing among all the members of state and nation the burdens of supporting public education and which have been moderately operative in the past may have accelerated development in the near future. The first of these is an enlargement of the area of taxation. Historically each family paid for the education of its own children; then the property holders, with or without children, were taxed to educate the children of the community; later, the proceeds of county or state taxation are used to supplement local effort; and now we are considering insistent proposals that the nation shall contribute. It is realized that local communities, rich in children and poor in taxable resources, have already often reached reasonable limits in their efforts to support schools.

The second tendency is towards the discovery of taxable values other than real property. Already in many places the limits of desirable taxation of real property have been reached. Franchises, incomes, and other values will increasingly come in for taxation even

within states and municipalities. If the national government is directed to contribute to the support of schools its revenues for this purpose will, of course, be derived exclusively from other than taxation of real estate.

#### PREVENTION OF WASTE

There are many kinds of waste in current education and these have various sources. Fundamentally the largest of these today is found in the misdirection of teaching effort, a condition for which teachers individually are only slightly responsible. In our schools, and especially in those for children from 12 to 18 years of age, the actual values of the objectives now defined are much more matters of belief and faith than of knowledge. We spend annually, for example, from \$7,000,000 to \$10,000,000 a year in teaching French and German in high schools. The methods employed are not always good; but a far greater source of wasted effort is found in the fact that there exist no clear cut objectives of modern language instruction. We allow or even encourage superficiality in the learning of these languages. Nowhere is it clearly indicated whether the practicable goal held in view is a reading knowledge, a speaking knowledge or a writing knowledge or merely an almost wholly inserviceable combination of all three. A more thoroughgoing knowledge than we now possess of the educational needs of American society would probably show the wisdom of investing even more money than we now spend on modern language instruction; but it should be spent in adequately training a relatively small number of persons so that the nation would be assured of a reasonable diffusion of interpreters (in the cultural and social sense) of

French, Japanese, German, Spanish, and Russian literatures, history and current thought.

We spend many millions annually in teaching algebra and geometry to girls and boys who will never make any genuine application of the results of their efforts. It would certainly be worth while for Americans to spend heavily for the teaching of citizenship; but it is very doubtful whether the history studies now taught in elementary and high schools "function" perceptibly in good citizenship. Without doubt a large part of the money we now spend on the teaching of manual training, music, English language, and science is as completely wasted as was the money spent for medicine and expert healing service in the dark ages, medically speaking, of the eighteenth and previous centuries. As regards objectives, most education is today not farther advanced than was medicine in 1850, agriculture in 1830 or chemical industry in 1800.

But teachers and other educators are only partially responsible for this apparent "backwardness" of education (it is not, of course, a real lagging, since the sciences on which education must eventually rest are only now in process of development). Society has not collectively reached the point where it is ready to devote to scientific study and research the means necessary to define the objectives and improve the methods of education. Money spent in rightly directed research in education would even now be abundantly repaid in increased economy and efficiency.

In some of the literature of propaganda recently widely distributed there are manifested tendencies to demand increased expenditures for education in a spirit that is the reverse of

"thrifty." Millions are asked, not for research into the possibilities of "physical training" but for the support of physical training itself, notwithstanding that even those who have given the subject fullest consideration can as yet offer us only a host of aspirations and beliefs as to what such training should be designed to accomplish. It is insistently urged that teachers' salaries should be greatly advanced, and reckless and superficial comparisons of teachers' salaries are made with those of other workers, quite regardless of age, sex, family and other economic conditions which play so large a part in determining the operations of the law of supply and demand. No convincing evaluations have yet been made of the kinds and degrees of service that are now given or may, under slightly changed conditions, be reasonably expected from that host upon whom we now so largely rely for teaching service—namely, our brightest and best young womanhood, giving a few youthful, pre-marriage years to teaching. Propagandists, ignoring questions of varying optimum standards of teaching service for children of 6 to 10 as against those of 16 to 18, or of the teaching of geography as against the teaching of French, claim that we must pay much more in the future than in the past for all kinds of teaching service. Possibly; but the public will increasingly want to be shown that educational leaders have fairly clear ideas of their specific objectives and that they have carefully studied the most effective as well as the most economical means of realizing them. Young workers, 18 to 25 years of age, can produce much valuable service in this world. Perhaps they can long continue to do so in certain fields of teaching, but not in all. If so,

we must discover their places of maximum usefulness and the character and amounts of the training necessary to produce, not ideal, but "optimum" service.

Now that public education has become so gigantic a public enterprise

the demands of economy no less than those of efficiency demand, on the part of a people devoted to right ideals of "thrift," that scientific studies of its best objectives and methods and of its needed personnel should be extensively supported and promoted.